



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

May 9, 2016

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Medical Officer

A. ACCIDENT: ERA14FA387 Mount Pleasant, South Carolina

On August 14, 2014, about 11:25 a.m. eastern daylight time, a Cessna 150M, N66241, was substantially damaged when it impacted terrain shortly after takeoff from Mount Pleasant Regional Airport-Faison Field (LRO), Mount Pleasant, South Carolina. The commercial rated pilot and non-pilot rated student were fatally injured. The airplane was registered to and operated by Hanger Aviation, Inc. Visual meteorological conditions prevailed, and no flight plan was filed for the local instructional flight. The flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

B. GROUP IDENTIFICATION:

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

Purpose

This investigation was performed to evaluate the pilots for any medical conditions, the use of any medications/illicit drugs, and the presence of any toxins.

Methods

The FAA medical case review, and the investigator's report, the pilot's FAA medical certification record and personal medical records as well as the pilot and student's FAA toxicology reports, autopsy reports, were reviewed.

Pilot – Right Front Seat

FAA Medical Certification Record

According to the FAA medical certification record, the 33-year-old male pilot was first certified in 2006. On his most recent FAA medical certification exam, dated May 25, 2011, he reported 275 total flight hours. On that exam, the certificate indicated he was 71 inches tall and weighed 114 pounds. The pilot reported a prior history of stomach, liver or problems and kidney stones but no new significant medical concerns. The FAA Aviation Medical Examiner identified no abnormal physical findings and issued a first class medical certificate with no limitations. The pilot had reported a diagnosis of Crohn's disease in remission since 2001 and a kidney stone removed in 2000.

Crohn's disease is an inflammatory bowel disease that may be due to an abnormal reaction of the body's immune system. Symptoms include abdominal pain, fever, weight loss and gastrointestinal bleeding.¹

Personal Medical Records

Personal medical records from a family physician from 2005 through 2010 revealed multiple visits in 2010 for symptomatic kidney stones. Additionally, in May 2010 the pilot was evaluated for diarrhea and abdominal pain, diagnosed with a recurrence of Cohn's disease, and treated with prednisone and tramadol. Prednisone is a steroid used to treat inflammatory process and reduce the body's immune response.² Tramadol is a Schedule IV controlled substance available by prescription. It is an opioid medication used to treat pain and commonly sold with the name Ultram.³

Gastroenterology records from 2000 through 2011 indicated the pilot had a history of Crohn's disease that was in remission. On his most recent visit dated May 19, 2011, the pilot's recorded weight was 117 pounds, he had a normal physical exam, and the gastroenterologist stated the pilot's Crohn's disease was in remission "for the most part" for many years. No other personal records were available for review.

Autopsy

According to the Medical University of South Carolina autopsy report, the cause of death was blunt head trauma and the manner was accident. The autopsy report stated the pilot weighed approximately 130 pounds. No significant natural disease was identified.

Toxicology

FAA Bioaeronautical Research Laboratory toxicology analysis detected tramadol in heart blood (10.76 ug/ml), vitreous (11.571 ug/ml), muscle (13.794 ug/g), brain (18.424 ug/g), liver (38.93 ug/g) and urine (351.645 ug/ml) and its active metabolite O-desmethyltramadol in blood (0.593 ug/ml) and urine. Hydrocodone and its metabolites, dihydrocodeine and hydromorphone, were detected in the urine but not the blood. Additionally, norcyclobenzaprine was detected in the heart blood and urine.

Tramadol is described above. The therapeutic range is considered 0.05 ug/ml to 0.50 ug/ml and Hydrocodone is a narcotic analgesic marketed under many names including Vicodin.⁴ Norcyclobenzaprine is a metabolite of cyclobenzaprine a prescription muscle relaxant marketed under various names including Flexeril.⁵ All three of these

substances warnings: may impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery.)⁶

Student Pilot – Left Front Seat

FAA Medical Case Review

According to the FAA medical case review, the 20-year-old male student had no medical certification examination records on file.

Autopsy

According to the Medical University of South Carolina autopsy report, the cause of death was blunt trauma to head and neck and the manner was accident. The autopsy did not identify any natural disease.

Toxicology

FAA Bioaeronautical Research Laboratory toxicology analysis identified ibuprofen in the urine. Ibuprofen is used to treat pain, inflammation, and fever and is marketed under many names including Motrin.⁷

D. SUMMARY OF FINDINGS

The pilot had a history of Crohn's disease and recurrent kidney stones but no recent medical records were identified. The autopsy did not identify any other significant natural disease.

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References

¹ National Institutes of Health U.S. National Library of Medicine, MedlinePlus, Crohn's Disease <https://www.nlm.nih.gov/medlineplus/crohnsdisease.html> Accessed 5/9/2016

² Drugs.com. FDA prescribing information, side effects, and uses. Prednisone. <http://www.drugs.com/pro/prednisone.html> Accessed 5/6/2016

³ Drugs.com. FDA prescribing information, side effects, and uses. Tramadol. <http://www.drugs.com/pro/tramadol.html> Accessed 5/6/2016.

⁴ National Institutes of Health U.S. National Library of Medicine MedlinePlus, Hydrocodone Combination Products. <https://www.nlm.nih.gov/medlineplus/druginfo/meds/a601006.html> Accessed 04/01/2016

⁵ Federal Aviation Administration. CAMI Toxicology Drug Information. Cyclobenzaprine. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=133> Accessed 5/6/2016.

⁶ Federal Aviation Administration, Forensic Toxicology WebDrugs. Tramadol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=199> Accessed 4/29/2016.

⁷ Federal Aviation Administration, Forensic Toxicology WebDrugs, Ibuprofen <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=77> Accessed 05/6/2016.